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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/700,078

Filing Date: November 03, 2003

Appellant(s): BRIDGEWATER ET AL.

Andrew G. Bunn
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/30/2009 appealing from the Office action mailed 4/30/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

BPAI Decision in this case decided on 6/28/2007, Appeal No. 2007-0504 for application serial no. 10/700,078.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,731,377	FRIEL	3-1998
4,325,856	ISHIKAWA	4-1982
5,502,089	BRICKER	3-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 2-5, 7, and 17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Friel (US 5,731,377).

It is noted that claims 2 and 17 are product-by-process claims wherein the phrase starting with “said emulsion polymer is formed by emulsion polymerization...” on line 7 until the end of each claim is not a claim limitation. Case law holds that “even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Friel discloses a polymer blend useful as a binder in aqueous coating composition comprising no volatile organic solvent (col. 11, line 50); 40-80 wt % of a soft polymer having a

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T_g less than about 15 °C (preferably -5-10 °C); and 20-60 wt % of a hard emulsion polymer having a T_g greater than about 20°C (preferably 25-65 °C) (col. 12, lines 1-22), wherein the composition has a pigment volume concentration of 23.65 % (col. 10, line 13). Friel exemplifies the use of two soft polymers (Sample 3 and Sample 7) where *Sample 3* contains 97 wt % butyl acrylate and methyl methacrylate (i.e., monoethylenically unsaturated nonionic (meth)acrylic monomer), 2 wt % methacrylic acid (i.e., monoethylenically unsaturated acid monomer), and 1 wt % ureido-containing adhesion promoting monomer (i.e., aldehyde reactive group-containing monomer) and *Sample 7* contains 59 wt % butyl acrylate and methyl methacrylate, 2 wt % methacrylic acid, and 1 wt % ureido-containing adhesion promoting monomer (Table 1 on column 7, col. 8, line 30-35). Additionally, see Table 1 for amounts of initiator (ammonium persulfate) and neutralizer (sodium carbonate).

In light of the above, it is clear that Friel anticipates the presently cited claims.

Alternatively, given that the final products appear to be the same, it would have been obvious to one of ordinary skill in the art to obtain the presently claimed product with a different process.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377), as applied to claims 2-5, 7, and 17 above.

With respect to PVC, Friel only exemplifies one painting composition and therefore only explicitly discloses one value for PVC, nonetheless, it teaches that the amount of pigment affects the glossiness or mat of the resulting coating (col. 1, lines 44-48).

It is the examiner's position that the amount of pigment and therefore the PVC is a result effective variable because changing it will clearly affect the type of product obtained, e.g., a coating with a mat or glossy finish. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In view of this, it would have been obvious to one of ordinary skill in the art to utilize a higher content of pigment including that within the scope of the present claim so as to produce desired end results, i.e., a less glossy finish.

Claims 1, 3-7, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377) in view of Ishikawa (US 4,325,856).

It is noted that claims 1 and 16 are product-by-process claims wherein the phrase starting with "said emulsion polymer is formed by emulsion polymerization..." on line 7 until the end of each claim is not a claim limitation. Case law holds that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Friel discloses a polymer blend useful as a binder in aqueous coating composition comprising no volatile organic solvent (col. 11, line 50); 40-80 wt % of a soft polymer having a T_g less than about 15 °C (preferably -5-10 °C); and 20-60 wt % of a hard emulsion polymer

having a T_g greater than about 20°C (preferably 25-65 °C) (col. 12, lines 1-22), wherein the composition has a pigment volume concentration of 23.65 % (col. 10, line 13). Friel exemplifies the use of two soft polymers (Sample 3 and Sample 7) where *Sample 3* contains 97 wt % butyl acrylate and methyl methacrylate (i.e., monoethylenically unsaturated nonionic (meth)acrylic monomer), 2 wt % methacrylic acid (i.e., monoethylenically unsaturated acid monomer), and 1 wt % ureido-containing adhesion promoting monomer (i.e., aldehyde reactive group-containing monomer) and *Sample 7* contains 59 wt % butyl acrylate and methyl methacrylate, 2 wt % methacrylic acid, and 1 wt % ureido-containing adhesion promoting monomer (Table 1 on column 7, col. 8, line 30-35). Additionally, see Table 1 for amounts of initiator (ammonium persulfate) and neutralizer (sodium carbonate).

With respect to claims 1, 3-5, and 7, Friel fails to disclose the use of 0.001-0.5 moles of chain transfer agent.

Ishikawa discloses aqueous copolymer latexes prepared by emulsion polymerization and teaches that conventional chain transfer agents are used to regulate molecular weight of polymers and are preferably used in amounts of 0.1-1 wt % based on the amounts (which roughly converts to 0.005-0.05 mol/kg monomer when using n-dodecyl mercaptan as the chain transfer agent and acrylic acid as the monomer).

Given that it is common in the art to utilize chain transfer agents to control molecular weight (and thus properties such as viscosity) as taught by Ishikawa, it would have been obvious to one of ordinary skill in the art to utilize a chain transfer agent in the presently claimed amounts in order to control molecular weight.

With respect to claim 6, Friel only exemplifies one painting composition and therefore only explicitly discloses one value for PVC, nonetheless, it teaches that the amount of pigment affects the glossiness or mat of the resulting coating (col. 1, lines 44-48).

It is the examiner's position that the amount of pigment and therefore the PVC is a result effective variable because changing it will clearly affect the type of product obtained, e.g., a coating with a mat or glossy finish. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In view of this, it would have been obvious to one of ordinary skill in the art to utilize a higher content of pigment including that within the scope of the present claim so as to produce desired end results, i.e., a less glossy finish.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377) in view of Ishikawa (US 4,325,856), as applied to claims 1, 3-7, and 16 above, and further in view of Bricker (US 5,502,089).

Friel fails to disclose the use of sulfoethyl methacrylate or phosphoethyl methacrylate but teaches that monomers include conventional ethylenically unsaturated monomers typically used in the preparation of polymeric latex binders for use in coatings (col. 5, lines 32-35).

Bricker discloses a latex composition useful in coating compositions and teaches that monomers with phosphonate or sulfonate groups (e.g., phosphoethyl methacrylate and sulfoethyl methacrylate) can be used to provide crosslinking sites on the polymeric backbone (col. 2, lines 7-15).

Given that Friel is open to the use of other conventional ethylenically unsaturated monomers and further given that Bricker teaches that phosphoethyl methacrylate and sulfoethyl methacrylate are used to provide crosslinking sites, it would have been obvious to one of ordinary skill in the art to utilize phosphoethyl methacrylate and sulfoethyl methacrylate in order to facilitate crosslinking the composition to form a coating.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friel (US 5,731,377), as applied to claims 2-5, 7, and 17 above, and further in view of Bricker (US 5,502,089).

The discussion with respect to Friel in paragraph 4 above is incorporated here by reference.

Friel fails to disclose the use of sulfoethyl methacrylate or phosphoethyl methacrylate but teaches that monomers include conventional ethylenically unsaturated monomers typically used in the preparation of polymeric latex binders for use in coatings (col. 5, lines 32-35).

Bricker discloses a latex composition useful in coating compositions and teaches that monomers with phosphonate or sulfonate groups (e.g., phosphoethyl methacrylate and sulfoethyl methacrylate) can be used to provide crosslinking sites on the polymeric backbone (col. 2, lines 7-15).

Given that Friel is open to the use of other conventional ethylenically unsaturated monomers and further given that Bricker teaches that phosphoethyl methacrylate and sulfoethyl methacrylate are used to provide crosslinking sites, it would have been obvious to one of

ordinary skill in the art to utilize phosphoethyl methacrylate and sulfoethyl methacrylate in order to facilitate crosslinking the composition to form a coating.

(10) Response to Argument

Appellant argues that the process of making the polymer in the product-by-process claim 2 clearly provides for a different product as evidenced by the 37 CFR 1.132 declarations filed on 12/21/2007 and 3/3/2009.

First,

With respect to the declaration filed on 12/21/2007, two of the three chromatogram charts show two elution times in both the inventive and comparative example. Therefore, it has not been established that the arguably critical effect of two elution times (and thereby arguably improved scrub resistance) is necessarily absent in the disclosure of Friel which does not include a step-wise addition of initiator. It is noted that the lines on the chromatograms are not clearly marked in the declaration filed on 12/21/2007. Applicant clearly identified the lines in the declaration filed on 3/3/2009. Furthermore, the multiple elution times in GPC (and therefore multimodal molecular weight distribution) is a property that was not disclosed in the original application and may therefore not even be permissible as evidence. Case law has held that basic property or utility must be disclosed in application as originally filed in order for affidavit evidence of unexpected properties to be offered. *In re Davies et al.* 177 USPQ 381 (CCPA 1973).

With respect to the declaration filed on 3/3/2009, the data in Table 2 attempts to establish that aqueous coating composition prepared like presently claimed and used in a paint have

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improved scrub resistance, however, such is not made given that the scrub resistance data for the examples with proper side-by-side examples (i.e., samples AH301 vs. AH303, SB170 v. SB171, and SB168 v. SB169) are not consistent. Specifically, while inventive AH303 and SB169 have improved scrub resistance over comparative AH301 and SB168, respectively, inventive SB171 has a lower scrub resistance than comparative SB170. Because of this inconsistency, a clear distinction cannot be made in regards to the presently claimed product-by-process limitations. The other scrub resistance data (referenced as Samples 3-6 and 11-13 in Table 2) are not pertinent because they are not proper side-by-side examples--the amounts of viscosity modifier are not the same in inventive and comparative examples.

Furthermore, even if the data clearly showed an improved in the claimed process, the inventive and comparative data of the declaration is not found to be reasonably commensurate in scope with the claimed invention. Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). First, each of the inventive examples that have a proper corresponding comparative example (i.e., samples AH301 vs. AH303, SB170 v. SB171, and SB168 v. SB169) has an emulsion polymer prepared from ureido monomer. Second, the amount of initiator used in the first 10 wt % of monomer conversion is not reasonably commensurate in scope with the presently claimed process ranges. Case law holds that whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the “objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.” In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range (i.e., scope). *In*

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re Clemens, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980), MPEP 716.02(d). Given that the amounts of initiator are important in the presently claimed process and further given that applicant has not shown that improved scrub resistance properties (which are arguably due to multiple elution times in GPC-MALS) are had throughout the presently claimed amount ranges, criticality for the entire scope of the presently claimed process on the final product cannot be supported.

Specifically, the exemplified amounts of initiator added during the first 10 wt % of monomer conversion (10, 20, 23, 10, 22.2, and 35 wt %) are not reasonably commensurate in scope with claimed less than half (i.e., 50 wt %). See table below which clearly illustrates what is claimed and what is exemplified.

Comparison of Claim 1 to inventive data of declarations filed on 12/21/2007 and 3/3/2009.

	Total Initiator (wt % based on polymer)	Initiator, first 10% (wt % based on total initiator)
Claim 2	0.05-0.3	open-ended to < 50
AH303	0.25	20
AH307	0.30	23
AH311	0.05	20
SB171	0.30	10
SB169	0.30	35
Inventive Example 2	0.14	22.2

Furthermore, the emulsion polymer is not reasonably commensurate in scope with the claims given that each one contains crosslinking monomer ureido monomer which is not claimed in independent claim 2. It is noted that the type and amount of neutralizer is reasonably commensurate in scope with the scope of the claims. There is no evidence of record to show that

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the amounts outside of the inventive examples and within the claimed range would also exhibit improved different properties.

(11) Related Proceeding(s) Appendix

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided herein.

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided herein.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Vickey Nerangis/
Primary Examiner, Art Unit 1796

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